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## SOCIETY OF ARTS.

FRIDAY, JANUARY 14th, 1853.

## SIXTH ORDINARY MEETING,

*Wednesday, January 12th, 1853.*

THE Sixth Ordinary Meeting of the Society was held on Wednesday, the 12th instant, James Meadows Rendel, Esq., F.R.S., Vice-president, in the Chair.

The following were elected Members :

Allcroft, John Derby, 5, Oxford-square, Hyde-park.  
 Appold, John George, 23, Wilson-street, Finsbury.  
 Bethell, John, 8, Parliament-street, Westminster.  
 Collins, William Whitaker, 15, Buckingham-street, Adelphi.  
 Dobson, Miss, 22, Doughty-street, Mecklenburgh-square.  
 Ferguson, Joseph, M.P., Reform Club.  
 Freeman, Joseph, 19, Artillery-place, Finsbury.  
 Fussell, Alexander, 2, Oakley-square, St. Pancras.  
 Guinness, Arthur, 70, King's Road, Brighton.  
 Harnage, Sir George, Bart., Bellaswardine, Shropshire.  
 Hawkshaw, John, 33, Great George-street, Westminster.  
 Knight, J. Jordan, 37, Camden-road Villas.  
 Manby, Charles, 25, Great George-street, Westminster.  
 Mayall, John Edwin, 224, Regent-street.  
 Noldwitt, John Spencer, 11, Albany-road, Camberwell.  
 Penn, John, Greenwich.  
 Radford, William, 8, Great George-street, Westminster.  
 Simpson, William, 2, Eccleston-street, Chester-square.  
 Thomas, Frank, Bruton-street, Bond-street.  
 Trueman, Edwin Thomas, 23, Old Burlington-street.  
 Way, Major, R.A., Sudbrook-park, Richmond, Surrey.  
 Westbrook, Andrew, Freeman's-court, Cheapside.  
 Woods, Edward, 21, Upper Southwick-street, Cambridge square.  
 Wright, Thomas Cooke, 18, Upper Gower-street.

And the names of 28 Candidates for Membership were read.

A Paper was read by Mr. C. Shepherd, Jun., "On Improvements in Electric Clocks, and the Means of Working the Greenwich Time Signals."

The Author divided the subject into two parts. In the first, a short history of the application of Electro-magnetism to horological purposes, with an account of recent improvements was given ; and in the second, the clocks which had been constructed for the Royal Observatory, and the arrangements which were there made for transmitting Greenwich Time Signals, and dropping the time balls, were described.

Soon after the discovery of the dry pile by De Luc, the electrical attraction and repulsion of that instrument was applied, as a motive-power, to light pendulums, many continuing to act for months together. In 1815, Zamboni applied a mechanical contrivance to the pendulum, by which a train of wheels was kept in motion ; and thus made, it was believed, the first clock in which electricity was the only motive-power employed, though it more resembled a philosophical toy than a clock. In 1819, the discovery of Oersted, relative to the influence of an electric current on a magnetic needle, opened a new field for inquiry, and many important applications were proposed, among which the

Electric Telegraph stood pre-eminent. Another result of the discovery of Oersted was the electro-magnet, or the power of conferring upon a bar of soft iron any degree of magnetism by the proper application of an electric current.

In the year 1837, Professor Wheatstone obtained, in conjunction with Mr. W. Fothergill Cooke, a patent for Electric Telegraphs, in which was included an instrument for exhibiting the letters of the alphabet in succession, in an opening made in the dial-plate, the letters being arranged round the rim of a disk ; or a hand was made to point to the letters arranged round the dial, the circuit being made and broken by hand. It occurred to Professor Wheatstone, that if the apparatus for making and breaking contact was moved by a clock, and figures were substituted for the letters on the dial of a telegraph, then that telegraph would become a clock, each movement of the seconds' hand producing a corresponding motion. This was carried out by Mr. Dent, in the year 1840, when the clock was exhibited in the rooms of the Royal Society, and Professor Wheatstone read a paper on the subject. In the succeeding year Mr. Bain applied for a patent for improvements in the application of motive power to clocks, in which he specified a method of applying electro-magnetism to that purpose, almost identical with the letter telegraph just mentioned. In 1843, Mr. Bain obtained a second patent, in which an ingenious method was described for communicating motion to the pendulum, by electric currents of very low intensity.

At this time Mr. Appold proved experimentally, that a slight alteration in the quantity of electricity produced a great difference in the rate of the clock ; and by the application of a new form of break, which kept the pendulum more nearly to one length of vibration, he much improved its performance.

About seven years ago Mr. Shepherd's attention was directed to the application of electro-magnetism as a motive power for clocks ; and on considering the nature of that power, and the continual variations to which it was subject, from the changes which were constantly taking place in any form of galvanic battery, it at once became evident that any direct application of electro-magnetic force to the pendulum must be fatal to its performance ; for every change in the power of the galvanic battery would produce a corresponding change in the length of its arc of vibration, and consequently in its rate, if not perfectly isochronous. To obviate this difficulty the idea occurred of causing an

electro-magnet to raise a weight, or bend a spring to a certain fixed extent at each oscillation of the pendulum; and to employ the gravity of the weight, or the elasticity of the spring, to impart the necessary impulse. By these means the continually varying force of the electro-magnet was regulated exactly by the amount of power which the pendulum required to continue its motion.

The arrangement which had been made at the Royal Observatory, Greenwich, at the Tonbridge Station of the South-Eastern Railway, and several other places, was then described. A brass bracket was fixed on the bed-plate of the clock, to the left of the pendulum rod, into the lower part of which the pivot of a small axis was introduced. To this axis two levers were fixed at right angles to each other, the one horizontal, the other vertical. On the horizontal arm there was a small sliding weight for giving the impulse to the pendulum. The pivot of another axis was introduced at the top of the bracket, and this also carried two levers at right angles to each other, the horizontal lever having a sort of latch-shaped point, and forming what was technically called the detent. The relative positions of this latch-pointed lever, and the point of the perpendicular lever on the lower axis, were so adjusted that when the horizontal weighted lever was raised, the point of the vertical lever passed the latch-shaped point of the detent. Two projecting points, attached to the pendulum-rod, were so adjusted, that when one of them, called the discharging point, pressed against the vertical lever, so as to raise the detent, the other, or impulse point, would be almost in contact with the vertical arm of the weighted lever. A compound lever was so arranged that one end carried an iron keeper over the poles of an electro-magnet, while the other was beneath the horizontal weighted lever, so that when the magnet was excited, the motion of the lever to which the keeper was attached raised the weighted lever, and locked it on the latch-point of the detent. The contact on which the transmission of the galvanic current through the coils of the electro-magnet depended, was made and broken by the pendulum touching a platinum spring each time it moved to the right.

Its action was as follows:—the pendulum moving to the right touched the break spring, thereby completing the galvanic circuit through the coils of the electro-magnet, which moved its keeper, the lever to which it was fixed, and also lifted the impulse lever. When the pendulum moved to the left, the reverse of this took place, the discharging point pressing against the perpendicular lever and lifting

the detent. At the completion of the vibration to the right, the pendulum touching the contact spring, again caused the electro-magnet to raise the impulse weight; and, on moving to the left, it lifted the detent and received another impulse.

The connection of the pendulum with the necessary wheels for carrying the hands to indicate the time on dials, and the method of moving one or more such arrangements sympathetically, were next described. After making many experiments, the author proved that by far the best arrangement for moving distant clocks by galvanic currents was to use the attractive and repulsive forces of two electro-magnets, exerted simultaneously on the opposite ends or poles of permanent bar magnets. The clocks consisted of a small frame of brass, into which the pivots of the ordinary wheels for reducing the motion of the seconds' wheel to that of the hour and minute hands, were introduced; two electro-magnets, one on each side, being also fixed to it. An axis at the upper part of the frame had two or more permanent bar-magnets fixed at right angles to it, in such a position that their poles should be immediately over those of the electro-magnets; and on the same axis were fixed, what were technically called the pallets, consisting of two arms having inclined planes at their extremities, which being pushed alternately against the teeth in the seconds' wheel, caused it to revolve, step by step, and so communicate motion to the train of wheels, and consequently to the hands. If an electric current was transmitted through the coils of the electro-magnets, so as to cause one side of the clock-frame to attract the permanent magnets, while the other repelled them, the axis on which the magnets were fixed would make a partial revolution, and the pallets acting on the seconds' wheel would drive it forward one step, or second.

The free negative pole of one battery terminated in a platinum-pointed spring on one side of the pendulum-rod; the wire from the free positive pole of the other battery ending in a similar way on the opposite side. While the pendulum was perpendicular, neither circuit was complete, but on swinging to either side the circuit was completed simultaneously with its vibrations. A pendulum and two dials, fixed at the Electric Telegraph Station at Tonbridge, were set to Greenwich mean time on the 12th of April last, and on comparing them on the 21st of August, they were found to be only 21 seconds fast. From that time their rate was taken daily; and on the 1st of October, after seven months uninterrupted action, they were only 8 seconds fast. The author believed that the performance of these clocks might still be

improved by giving the impulse to the pendulum in the middle of its vibrations, and by using water for completing the circuit instead of springs. To accomplish this, advantage had been taken of the slowness of action of an electro-magnet, and a peculiar form of remontoir escapement, superior, both theoretically and practically, to that generally in use, had been adopted with success at the Royal Observatory, and was much approved by the Astronomer Royal.

The author next proceeded to describe the arrangements which had been made at the Royal Observatory, Greenwich, for transmitting mean time signals, through the medium of the Electric Telegraph, to all parts of England. This was effected by breaking the contact in three places; namely at the twenty-four hour wheel, the one-hour wheel, and the one-minute wheel. No signal could therefore pass until these three contacts were made simultaneously. The means adopted for accomplishing this object were then described. Two metal springs were fixed parallel to each other on a block of ivory, so as to insure perfect insulation. A pin was fixed to an arm carried by the axis of the seconds' hand which, coming in contact with an inclined plane fixed to the upper of these two springs, caused it to make contact with the other. The inclined plane was of such dimensions that the contact between the two springs was maintained for one second only. As the seconds' hand revolved once a minute, it was evident that this contact between the springs would take place at intervals of equal duration. The contact pin and seconds' hand were fixed to the arbor of the one-minute wheel in such a manner that when the latter pointed to the sixtieth second, the two springs were pressed in contact by the pin. A similar pin to that carried by the seconds' wheel, and acting on two other metal springs in the same way, was attached to the axis of the minute-hand. The contact between these two springs was made half a minute before, and broken half a minute after each hour.

In the twenty-four hour wheel twenty-three pins were screwed, which acted upon a third pair of springs insulated in the same manner as those already described. In this case, however, the contact was made five minutes before each hour. An ordinary sand and acid-battery, consisting of seventy-two elements, had one of its poles connected, by means of gas-pipes, with the damp earth at Greenwich, the opposite pole being connected with the upper of the two one-minute contact springs. At five minutes to any hour, except one o'clock, one of the pins in the twenty-four hour wheel made and maintained the contact

between its two springs. At half a minute to the hour, the one-hour contact was made by the movement of the minute hand. The third and last contact still remained broken; but as the seconds' hand dropped to the sixtieth second of the last minute of the hour, the one-minute contact was made. This the only remaining break in the circuit being now closed, the galvanic current instantaneously passed.

Another pair of springs placed on one side of the twenty-four hour wheel was fixed at such a distance from the face of the wheel, that the whole of the twenty-three pins, except one which was much longer than the rest, passed without touching them. This long pin corresponded to one o'clock, and its object was to complete, automatically, a galvanic circuit through the coils of two electro-magnets, which, by their attractive force, exerted upon a piece of iron, released the Greenwich time-ball. At present a circuit of  $10\frac{1}{2}$  miles, being the longest distance, it was believed, through which electro-magnetic clocks had yet been practically worked, was in successful operation.

The CHAIRMAN remarked, that in this practical age, it was essential to consider not only the scientific, but the practical interest of such a subject as that now brought forward; for it was as much the duty of a Society like the present to make science popular and interesting to practical men, as to make it interesting to scientific men.

MR. E. B. DENISON observed, that Mr. Shepherd's invention was, perhaps, one of the most ingenious applications of electricity; and knowing the conditions which clocks ought to satisfy, he might say that Mr. Shepherd's mode of effecting his object was superior to that of any other person. He, however, believed, that the invention described in the paper did not possess that extreme practical advantage over clocks going by the old-fashioned principle of gravity, that had been supposed. The escapement adopted by Mr. Shepherd, in its latest and most improved form, was nothing else than a dead escapement, with a constant force. Beginning, as all inventors did, with a remontoir escapement, Mr. Shepherd had found there was something wrong in it; and, like the rest, had returned to the ordinary dead escapement. A tooth could be lifted on to a dead pallet by a constant force, as well as by electricity. The question therefore was this; how was electricity better than gravity? He very much doubted whether an electric clock could be made more cheaply than a gravity clock; and certainly, if the clockmakers would dispense with a great deal of polishing and getting up, a dead escapement clock would be much the cheapest. It was true Mr. Shepherd's clocks did not require winding up; but it would be necessary to engage some person to keep them in order,—and that could not be done for less than the cost of winding up and repairing a dead escapement. Mr. Denison then proceeded to state that there was a prospect of that great problem of

clockmaking—a perfect gravity escapement—being solved. In fact it was done. Within a few yards of that room there were two clocks going with a gravity escapement, giving a constant force to the pendulum, without any friction. One of these was intended for the New Houses of Parliament. With respect to the electric telegraph, it would be remembered that an electric clock, and a clock to work a number of dials at a distance, were different things. The latter object was effected in the clock made in 1840 by Mr. Dent for Professor Wheatstone; the connection being made by gravity instead of by chemical means. If, therefore, a clock could be made with a proper gravity, or dead escapement, so as to keep time within a second in a week, and if it would work other dials at a distance, what more could be required? The plan of carrying two plates dipping into two jars at the ends of the pendulum cross-head, was not very elegant, and involved some degree of resistance, though it might lead to something better. In reference to the Greenwich time-ball, Mr. Denison believed that there was no difficulty in letting off a heavy hammer of a striking clock at any required moment, without the intervention of three sets of hands.

MR. LATIMER CLARK thought the plan of dipping the metallic plates into jars would be found objectionable, after the action had been maintained for some time; because the two metals might wear away unequally, and so destroy the balance of the cross-head. With respect to the time-ball in the Strand, Mr. Clark said it had been in action three or four months without any failure, and the clock in connection with it had only stopped twice, and then from the rain penetrating the case.

MR. C. V. WALKER, speaking from long experience of Mr. Shepherd's clocks, could testify to their general excellence. Those at the Tunbridge station had been in operation for a year and a half, and had worked in a perfectly satisfactory manner, with a very feeble battery power.

MR. SHEPHERD, in reply, observed, that he thought Mr. Denison had mistaken the object of electric clocks, which was not so much to make one perfect clock, as to be able to transmit time simultaneously to a number of others. This had been successfully accomplished.

MR. ALDERMAN SPIERS moved, and MR. W. DE LA RUE seconded a vote of thanks to Mr. Shepherd, which was carried unanimously.

### INSTITUTE LECTURES.

REPORT from the Institutes' Committee to the Council, in reference to the delivery of Lectures at the Institutions in Union with the Society of Arts.

THE Lecture-schedules, which, under your authority, were issued on the 24th of November last to the Institutions in Union with the Society of Arts, having been returned by 137 of the 236 Institutions to which they were sent, the returns have been very carefully considered, as well as the letters by which many were accompanied, and your Committee now beg leave to report the results at which they have arrived.

It has been already stated, that, although the Schedules were sent to 236 Institutions, returns were made by only 137; and it must be added, that not more than eighty-three expressed a desire that arrangements should be made for lectures for them during the ensuing spring.

It will be remembered that the arrangements proposed to be made were merely provisional for the Spring Course; and that the publication of anything like a complete plan of lectures, was postponed until the views of the lecturers, as well as the wants and capabilities of the Institutions, could be more fully ascertained, by correspondence with them, by discussion in the Journal, and by conference with the Representatives.

The desire of this Committee is, in all its proceedings to consult the Institutions, and to promote in them the growth of what is requisite for their improvement, rather than to attempt to bring in upon them from without a plan of improvements for which they are unprepared.

The Committee, however, regret to be obliged to report that a large number of the eighty-three Institutions which have requested that lecturers should be engaged for them, have named such low fees as to make it impossible to engage for them lecturers of such qualifications as the Institutions would expect to obtain through the medium of this Society. Of these Institutions, two are in Ireland, one is in Scotland, and the rest are scattered over the whole of England and Wales, from the Tweed to the Land's End. The total number of lectures required is 306. The lowest fee offered is 1*l*., the highest, is 5*l*. 5*s*., per lecture, to include travelling and other expenses. Thirty lectures are requested at fees not amounting to more than 40*s*. each.

Those which offer 4*l*. and upwards, are:

- ABERDEEN.—For *Dominant Ideas of different Ages*; and *Characteristics of Great Writers*.
- BARNSELY.—For *Dominant Ideas of different Ages*; and *Characteristics of Great Writers*.
- CARMARTHEN.—For *Music and its Influence*; and *Music as a part of Education*.
- DUNDALK.—For *Electricity and Magnetism, with practical applications*; *Chemistry applied to Agriculture*; and *Sanitary Improvements, and their Influence*.
- DURHAM.—For *Electricity and Magnetism, with practical applications*; *Volcanoes and Earthquakes*; and *Antiquities of Nineveh*.
- GRANTHAM, Philosophical Institution.—For *Volcanoes and Earthquakes*; *Dominant Ideas of different Ages*; and *Music of different Countries*.
- HIGHGATE.—For *Physical Geography*; and *Oratory and Orators*.
- LEEK.—For *Music and its Influence*.
- LOUGHBOROUGH.—For *Music and its Influence*.
- NOTTINGHAM.—For *Dominant Ideas of different Ages*; and *Characteristics of Great Writers*.
- SALISBURY.—For *Science, its Influence on the Arts of Life*; *Dominant Ideas of different Ages*; *Characteristics of Great Writers*; and *Music and its Influence*.
- SHELTON.—For *Volcanoes and Earthquakes*.

For lectures on "Chemistry (general)" only three Institutions have applied, Chepstow,

Huntingdon, and Tewkesbury. It is, therefore, impossible to provide these Institutions with lectures on this subject. For "Chemistry in connection with Agriculture," six Institutions, one of them in Ireland, have applied. These are insufficient to form the basis of any combination which the Committee could hope to make on terms mutually beneficial to the lecturers and to the Institutions.

The same remark applies to the subject of "Oratory and Orators," for which only seven Institutions in widely distant localities have made application.

For "Capital, Labour, and Machinery" only two have applied; but to these the Committee hope to be able to lend two MS. lectures, to be written for this Society, by a high authority.

For "Emigration;" "Sanatory Improvements, and their Influence;" "Drawing, and its Uses;" "How to look at a Picture;" and the "Music of different Countries," the applications are respectively eight, nine, five, seven, and five; from widely distant localities, presenting no sufficient opportunity for the requisite combination.

For "Gas and its Applications" there are only three applications; and the terms offered are 1*l.* 10*s.*, 2*l.* 2*s.*, and 2*l.* 2*s.*

For the "Antiquities of Nineveh" there are twenty-one applications, the whole of which the Committee hope to provide for by the loan of two MS. lectures, composed expressly for this Society, by Mr. A. H. Layard, M.P., who desires thus to testify his interest in the undertaking.

The subjects of "Dominant Ideas of Different Ages," and "Characteristics of Great Writers," will be provided for by MS. lectures, to be written for the Society, by the Rev. Derwent Coleridge, M.A.

It is proposed to lend the MS. lectures to the Institutions in Union, at the charge of half-a-guinea for each delivery.

The applications for the following subjects have been committed respectively to the following gentlemen, viz.—

"Physical Geography," and "Volcanoes and Earthquakes," to W. Hughes, Esq., F.G.S.

"Music and its Influence," and "Music as a part of Education," to John Hullah, Esq.

Although the Committee could not invite, nor expect, these gentlemen to accept the very low fee which in many instances, as stated, has been offered, it is hoped that they will be able to make satisfactory arrangements with some of the Institutions; and they have undertaken to communicate with all.

The remaining subjects of "Science, its importance as part of Education," "Science, its influence on the Arts of Life," and "Electricity and Magnetism, with practical applications," it is hoped will be provided for in the same manner as those last mentioned.

Six institutions near Shrewsbury must be especially mentioned,—they are the Chester Mechanics Institution, Ludlow Literary Association and Mechanics' Institution, Newport (Salop) Mechanics' Institution and Literary Society, Oswestry Young Men's Institute, Shrewsbury Literary and Scientific Institution, and Wrexham Literary Institution.

These Institutions not only agreed upon the

same subjects, but also arranged and suggested a plan by which the lectures could be delivered consecutively. If their example in this respect should be generally followed in future, the work of geographical combination and arrangement would be greatly simplified; and there is reason to hope that the efforts of the Society in this direction will be crowned with success. A very large number of the Institutions had completed their arrangements for the Spring Course before the Schedules were issued. Many pleas of poverty, which have now justly been put in, will have no existence when the more general recognition of the importance of these Institutions has recruited their resources; and when, new ones arising and being brought into union with the Society, the lecture districts shall be more thickly peopled with Institutions requiring lectures, the work of combination will be comparatively easy.

(Signed) HARRY CHESTER,  
Chairman of the Committee.

12th January, 1853.

#### FOREIGN POSTAGE REFORM.

THE following very important communication has been received from Don Manuel de Ysasi, the Honorary Secretary of the Association to Promote a Cheap and Uniform System of Colonial and International Postage:

St. Petersburg, 20th Nov. (2nd Dec.), 1852.

MY LORD,—Having been solicited by the Council of the International Postage Association in October last to proceed to the seats of the governments of the principal countries of Europe, with a view of ascertaining their sentiments in respect to the objects of the Association, and their readiness to acquiesce and co-operate in the alteration of the system of postage at present in force on the continent, I have now the honour to lay before your Lordship, as the President of that body, the result that has concluded my labours as far as regards the government of this most important empire—Russia.

Shortly after my arrival here I had the honour of submitting the letter of the Association, under date October 18th, to the notice of the Postmaster-General, who, in this country, has the sole and entire management of the affair of the post. In the interview, His Excellency expressed his pleasure at hearing of the objects of the Association, and instanced the fact that already in this country two important elements of the plan are in full operation; namely, uniformity of charge to all parts of the empire, irrespective of distance; and necessity of pre-payment.

His Excellency expressed not only his willingness, but his desire to become acquainted with the details of the proposed plan, and requested me to furnish him with a sketch of it, that he might give it his attention.

I therefore drew up a short letter, of which I beg to enclose a copy, in which I endeavoured to explain the intentions of the Association, and which I intended might serve as a general letter to the other courts, which were to be visited subsequently. This I forwarded to His Excellency, with a request that he might give it his immediate attention, as I purposed leaving St. Petersburg in a short time.

On the 22nd November I had the honour of re-

ceiving a letter from him, of which I also enclose a copy, as also one addressed to me individually.

The tenor of these two letters is so fully and entirely in accordance with the wishes of the Association, that I am sure they will participate with me in the very great pleasure and satisfaction that their perusal afforded. It was necessarily impossible to request from him any *pledge* that the Russian Government would carry out to the full extent the ideas of the Association; but I am sure that his Excellency's feelings are so entirely in accordance with those of the Association on the subject, that he only waits for the concurrence of the other European governments to assist; to the utmost in carrying out their plans.

I need scarcely, I trust, express the pleasure that this success has afforded me, and I can only trust that I may meet with equal good fortune in the other countries which I propose visiting on behalf of the Association.

I have the honour, &c.,

(Signed) MANUEL DE YSASI.  
To the Right Hon. the Earl Granville, &c.,  
President of the International Postage Association.

International Postage Association,  
Society of Arts, London, 15th October, 1852.

YOUR EXCELLENCY, — This Association having already had the honour to address the several foreign powers through the ambassadors at this court on the subject of a reform of the present complicated system of International Postage, we take the liberty to present this letter through our secretary, who will arrive in a few days in St. Petersburg on this business.

We are aware that many treaties are in force which could not be set aside except by mutual consent; but this consent will never be obtained until a new, general, and uniform system shall be offered as a substitute for these treaties; it is with this view that we present to your Excellency a plan which appears to us, after much consideration, to be the best that can be adopted.

The plan consists of the three following articles:—

1. Each country to determine, according to its own judgment, a postage-rate for foreign letters, provided that this charge be the same for every country entering the Postal Union and for every portion of the country. The postage in all cases to be paid in advance.

2. Each country shall engage to receive and deliver to its address, clear of all charges, every letter sent by the post from the countries included in the convention, and intended for any part of that country.

3. Each country shall also undertake to convey through its territories, without charge, every letter passing through it to any other state in the proposed Union.

It is on these three points that we have the greatest desire, as being the first step towards the accomplishment of so important an object, to obtain the opinion of foreign powers; and it is for this alone that we have instructed our Secretary to solicit of your Excellency a few lines in reply to the letter (a copy of which is enclosed herewith) expressing your approbation, and stating that you are ready to co-operate in a project calculated to produce such great and permanent benefits.

If your Excellency should agree with any of the three above articles, and not with the rest, we shall be greatly obliged if you will specify the points which you do not approve.

(Signed) for the President and Council,  
MANUEL DE YSASI, Hon. Sec.  
To Comte W. D'Adlerberg, &c., &c., St. Petersburg.

St. Petersburg, 10th Nov. (20th Nov.) 1852.

SIR,—In reply to the communication bearing date the 18th October, addressed to me by the International Postage Association, I have the honour to inform you that I entirely concur with respect to the advantages which would result from making the charge upon letters uniform and as low as possible.

In Russia, where this system established for several years, is in full force, letters from one end of the Empire to the other are charged uniformly ten copecs for the half ounce.

As regards the project for establishing a similar low and uniform charge on all letters passing between the Russian empire and foreign countries, on the basis laid down in the letter of the 15th October, which has been sent to me in the name of the Postage Association by you, as its Honorary Secretary, I have the honour to inform the honourable Association, that for my part I see no inconvenience in taking the proposition into consideration, and that I shall with pleasure furnish the necessary information for carrying it into effect so soon as the Governments of the respective foreign powers shall place themselves in direct and official communication with the Imperial Government.

I have the honour, &c., &c.,

(Signed) COMTE W. D'ADLERBERG.  
President of the Postage Department of the Russian Empire.

Don Manuel de Ysasi, &c., &c., &c.

#### COLONIAL PENNY POSTAGE.

THE Council of the Colonial and International Postage Association, as will be seen by an advertisement in another part of our paper, has come to the following resolution upon the important question of our Colonial Postage:

"That the first object of the Association is to extend the system of uniform penny postage, already in operation between the United Kingdom and the Channel Islands, to the whole of the British Colonies and possessions. The total amount of postal revenue derived from all the Colonies does not exceed 200,000*l.* a year. The whole, obviously, could not be sacrificed by the measure proposed; but it would be sound national policy to abandon even the whole to promote in so eminent a degree the commerce, education, freedom of communication and friendly relations between the Colonies and the mother country."

The amount of revenue derived from the Colonies is extracted from the MS. return obligingly furnished by the Post-master General at the request of the Council of the above Association, and printed at length in our Journal of the 10th December. In that return the income from Transmarine Colonial Postage, by each line of packets, stands as follows:

French Mail . . . . .	£16,016
Belgian . . . . .	630
Prussian . . . . .	1,636
Dutch . . . . .	766
Hamburgh . . . . .	1,548
American . . . . .	33,237
West Indian . . . . .	23,884
Cape . . . . .	5,115
Peninsular . . . . .	3,627
India via Southampton . . . . .	42,605
India via Marseilles . . . . .	36,413
Sydney, &c. . . . .	5,730
African . . . . .	383
Intercolonial Postage . . . . .	15,016
Red Sea Postage . . . . .	6,405
	<u>£193,011</u>

## HOME CORRESPONDENCE.

## GREAT EXHIBITION SURPLUS.

SIR,—Considering the great interest with which the announcement of the intentions of the Royal Commissioners with regard to the disposal of the Exhibition Surplus was looked for by the public, it is a matter of surprise that their Report has hitherto met with so small a share of criticism, the columns of your journal last week containing, under the signature of  $\Delta$ , the first serious onslaught which has been made upon their application of that celebrated fund. The advantages of the attack over the defence of a position are well known, and any attempt effectually to repulse the whole of  $\Delta$ 's skilfully planned assaults would occupy more space than you could probably spare; but I trust I may be permitted to state, in a few words, the grounds on which I am disposed to take a somewhat less desponding view of the prospects of the "Cabbage-garden at Kensington-gore" than that entertained by  $\Delta$ .

In considering this question we must not lose sight of the fact that 170,000*l.*, although in itself a good round sum, is totally and obviously inadequate to the establishment and maintenance of a National Institution of any description on a scale at all commensurate with the grandeur of the memorable undertaking to the success of which the surplus is indebted for its existence; and it would seem probable that the very smallness of the sum, when compared with the extravagant expectations to which it gave rise in many quarters, may not have been the least of the difficulties with which the Royal Commissioners have had to contend in deciding on the use to which it should be applied.

Your correspondent objects to the scheme proposed in the Report, both on the score of impracticability and inexpediency, and he thinks that, granting the purchase of land to have been in other respects a judicious measure, the choice of site has been a bad one.

I have neither the right nor the desire to put myself forward as the champion or apologist of the Royal Commissioners (who, I doubt not, are well able to defend themselves), and I know no more of their proceedings or intentions than can be gathered from their published Report, which, whilst it contains some points to which exception may perhaps justly be taken, does not appear to me by any means to merit the sweeping condemnation pronounced upon it by  $\Delta$ . The vast and comprehensive scheme shadowed forth in that small blue book is composed of many parts, some of which may possibly prove to be neither feasible nor desirable; but it must not be forgotten that each or any one of them may be carried out by itself quite independently of the remainder, and the real question at issue is, not so much whether the whole scheme is practicable or otherwise, as whether or not such portions of it as can be carried out are likely to amount to a great national benefit.

The arguments employed by  $\Delta$  against the proposed Industrial College rest on the assumption that no want can exist in a community without its being perceived, and that no sooner is it perceived than effectual steps are taken for its removal by those who feel it; in illustration of which we may take the case of some of the tribes of the interior of Africa, who, living in a climate which may be described as being rather warm than bracing, find a thin coat of grease to be sufficient clothing, and, consequently, have not as yet found it necessary to establish cloth or calico

manufactories in their country, although some of their neighbours on the shores of the Atlantic, influenced, no doubt, by the dampness of the sea breeze, are beginning to evince a partiality for the products of Lancashire. Now there can be no doubt, if  $\Delta$ 's theory be correct, that were the climate of the interior to become, by some natural (or unnatural) convulsion, somewhat more rigorous than it is, a second Leeds or Manchester would at once spring up in the desert for the purpose of providing clothes for the shivering savages. Some instances nearer home might, however, be adduced, which would appear somewhat to militate against this theory; as, for example, the Great Exhibition itself, which, considering its early struggles and the violent opposition it met with, can hardly be said to have been felt as a national want, although now acknowledged on all sides to have been a great national benefit. Instances less remarkable, but perhaps equally convincing, might be multiplied to any number, were it necessary, for the purpose of showing that the absence of any loudly expressed feeling in behalf of an Industrial College is not to be taken as amounting to anything like a conclusive argument against the want of such an establishment being really felt, and much less so as against its true, although, perhaps, not fully understood utility. If we are to take as a type of the English people  $\Delta$ 's high-minded and independent youth, who is described as being so full of proper pride and self-respect, that he disdains to stand indebted to any man even for knowledge, and will not condescend to be taught unless he is able, "on equal terms," to impart instruction in return, it must be acknowledged that the difficulty of obtaining pupils for the contemplated College will be considerably greater than was probably anticipated by its proposers; but, for my part, I believe that "Young England" has not yet grown quite so self-sufficient as  $\Delta$  would have us think, and that we have yet amongst us many persons mean-spirited enough to consent to receive instruction, when they have reason to believe that it will be beneficial to them. Not satisfied with informing us of the impossibility of finding pupils willing to learn,  $\Delta$  goes on to show that it will be equally impracticable to procure competent instructors willing to teach. I do not believe that there is any scarcity in this country of well-qualified persons ready, for a fair remuneration, to undertake *any* duty: and if it be true (as  $\Delta$  thinks) that the School of Mines has not benefited the public to a degree sufficient to justify the sums expended upon it, at least its failure cannot be said to be the result of the occupation of its chairs by "inferior hands or pretenders." This part of the scheme, however, involves considerations of a magnitude and importance which preclude its being satisfactorily handled within the limits of a letter; the whole matter will, no doubt, be fully sifted, and the final verdict of the country given upon the evidence.

The fact is, that gigantic as have been the strides made by this nation during the last century in the path of civilization, we are as yet very far from having reached its extreme limit; and if we wish to maintain the honourable place which we have attained in the industrial race, we must not pause to congratulate ourselves, but keep pushing on, lest we be overtaken and passed. Above all things, we must avoid that overweening self-confidence, which would teach us to believe that because we now stand first among nations in commerce and in some of the industrial arts (the Exhibition has shown us that we are far from being first in all), we may expect always to keep the same place without constantly renewed exertions on our part.

Technical instruction, however, is very far from being



the only kind of art-education required in this country. It would seem that we have yet to learn the rudiments of taste in the Fine Arts. Why is it that in this great metropolis there is hardly a building to which an Englishman can point with pride and satisfaction, which is not at the same time a relic of a past age? Why is it that notwithstanding the acknowledged merit of some of our sculptors, we have scarce a statue or a public monument that would not be a disgrace to a provincial town? Why is it that our high places are disfigured by such outrages on good taste as the brazen giant in Hyde Park, and the equestrian monster on Constitution Hill? Why is it that the "finest site in Europe" is occupied by a building the very name of which is an insult to the nation? Are we to suppose that an Englishman is naturally incapable of comprehending the difference between the true and the false in artistic taste? Is the burden of our song always to be

"Hang it! I can't make a statue,"

or shall we set to work with a will, and endeavour to learn how to make one? I believe that what is really required in order to arrive at this desirable consummation is, that the popular eye should be cultivated,—that it should be habituated to the view of the truly noble and beautiful in art, whether through the medium of pictures, casts, or models. The little that has hitherto been attempted in this direction has failed for want of space and arrangement. Year after year has passed on since the absolute unfitness of the building erected to contain the National Picture Gallery has been acknowledged, and the total failure of space in the British Museum is no new discovery. During these years there has been much talk of removing one or both of those establishments to some new situation, in which present wants could be supplied, and space afforded for growth; but one great difficulty has always stood in the way of anything being done,—authorities differed with regard to the locality to be fixed upon. Objections of every conceivable kind were brought against the various spots proposed for the new building. One was too low, another too dear, a third too damp, a fourth too much exposed to smoke,—in short, nothing would do but that which could not be obtained; and, in the meantime, the ever overflowing metropolis has continued to advance in its unchanging westerly course, and acre after acre of ground that might have answered the purpose very well, has been engulfed in the ocean of bricks.

As long as the question of site remained undetermined, there was no prospect of any further steps being taken; no one could even form an idea of what description of building would be required, until it should be known where it was to be built. "*Le premier pas*" was the grand difficulty, and this the Royal Commissioners appear to have solved; they have cut the Gordian knot. Here is the ground. What shall we build? is now the question for the country to decide.

Had the land purchased been destined solely for the erection of a new National Gallery, or for the reception of the surplus of the British Museum, great as, I believe, would have been the national importance of the measure, it would undoubtedly have been open to the objection of not practically carrying out all the objects of the Great Exhibition; but this portion of the scheme must be considered as being subsidiary to the Industrial College and the Trade Museum; the latter of which will probably, if carried out in the spirit in which it has been commenced, prove to be the most thoroughly practical and genuine supplement to the Great Exhibition that could have been devised. Even this, however, to whatever perfection it may be brought, cannot by

itself fulfil all the ends for which its famous predecessor was designed. In that noble collection, every department, not only of industry, but also of science and the fine arts, was represented, with the single exception of painting, which was excluded for reasons inapplicable to a permanent institution; and I think that, in order to carry out effectually the objects of the Great Exhibition, all these departments should be united without any exception,—an undertaking evidently requiring an expenditure which the surplus would be very far from covering.

With reference to the juxtaposition of the learned societies, but little need be said here: the advantages or disadvantages of the measure will have to be considered by each separately, and if any one of them prefers the shade of "its own fig tree" to the comparative sunshine of a "Cabbage-garden," I do not suppose that any attempt will be made to transplant it by force. At the same time, when we remember that some four or five of the societies (and some of these not the least important among them) live at present, if not in harmony, at least without breach of the public peace, under a common roof provided for them by Government, it seems unlikely that the suggested migration would produce such a lamentable effect upon their temper as  $\Delta$  appears to anticipate.

We come now to the question whether or not the locality selected by the Royal Commissioners is the best that could have been obtained. I think it is. The incessant change of the metropolis, although brought forward by  $\Delta$  as an objection, is, to my mind, the strongest point in its favour. So far from there being any probability of Kensington becoming twenty years hence the most inaccessible part of town, there appears to me to be every reason to anticipate the very reverse. The rapid increase of London to the westward, unless checked by some cause beyond the reach of human foresight, must tend each year to make that a spot more and more central; and as a natural result, greatly to increase the pecuniary value of the property. It is doubtless true, that Kensington is further from the "cheap suburbs" than Somerset House, or Marlborough House, but I believe it would be found difficult to purchase land in the neighbourhood of either of those localities on any terms, and in any case it must be done at a price which would preclude the possibility of obtaining sufficient space for carrying out the scheme put forth in the Report. It is hardly possible to imagine any circumstances (short of a successful inroad by our friends over the water, or a wholesale migration of the English race to the antipodes), under which the value of the land purchased by the Royal Commissioners can fail to increase, and that rapidly; indeed I believe that it might be resold, even now, for at least as much as it cost, and a few years hence, for much more. If this be the case, as I doubt not it is, there is no occasion for  $\Delta$  to mourn as one without hope over the disappearance of the surplus, which, although it be at present sunk, may yet, should the country decide against the scheme of the Royal Commissioners, be exhumed, perhaps larger and more flourishing than before. But I hope for better things. I believe in the practicability of establishing an Industrial University: I believe in its usefulness when established, especially if it be connected with museums of Art, Science, Industry, and Commerce; and I believe that if this great undertaking be carried out with spirit and energy, and be well supported by the country, we need not despair of seeing the despised cabbage-garden transformed into an inexhaustible gold-field, in which every patient and industrious digger shall reap an ample reward for his labour.

## PROCEEDINGS OF INSTITUTIONS.

**BIRMINGHAM.**—One of the most cheering and satisfactory meetings for the advancement of science which has taken place in the Midland Counties, was held in the rooms of the Philosophical Institution, on Monday the 10th inst. The attendance included the leading manufacturers of the town, the principal iron-masters of the neighbourhood, with many of the leading and influential gentlemen of the town and surrounding country. The necessity for some exertion being made towards supplying a superior class of instruction in science and art has long been apparent. The mayor, H. Hawkes, Esq., occupied the chair, and there were present, Lord Lyttleton, the Hon. and Rev. Grantham Yorke, Archdeacon Sandford, Chancellor Law, the Revs. J. C. Millar, S. Gedge, J. A. James, J. B. Marsden, and S. Bache; G. Dawson, Esq., M.A.; H. Luckcock, Esq.; W. Matthews, Esq.; S. Thornton, Esq.; J. T. Lawrence, Esq.; J. T. Chance, Esq.; J. F. Winfield, Esq.; Messrs. Arthur Aitken, Oxley, and a number of other gentlemen. The Mayor briefly explained the cause of the meeting, and alluded to the importance of a Literary and Scientific Institution to the town and district. The Report, prepared by the provisional committee, was then read by Mr. W. P. Marshall, of which the following is a digest:—"It is intended that the society shall organize measures for securing the erection, by subscription, of a spacious building. In this it is proposed to provide a lecture theatre, with seats only on the floor in the first instance, but capable of admitting of the construction of a gallery, should such an addition, at any subsequent period, be found necessary or desirable. The plan will likewise embrace three museums, the first of which will be devoted to the raw materials of the industry of this district, geological and mineralogical specimens, &c.; the second to articles illustrative of manufacturing processes, as well as to finished specimens of different dates and countries; and the third to machinery and models. The other features of the scheme comprise a chemical laboratory for lectures and classes; class-rooms; a reading-room, with a scientific and general library of reference; and as an entrance to all the departments a large hall, adapted for the reception of sculpture or other works of art, of which it is hoped that, in a neighbourhood so richly stored with them as our own undoubtedly is, donations would be made sufficiently numerous to form hereafter a nucleus of a public gallery. Another department will be devoted to mining records, showing the dimensions and position of strata in the different mineral workings of the district. This portion of the undertaking will be in connection with the National School of Mines and Museum of Practical Geology, in London, from which every requisite assistance has been promised. The information thus attainable will, it is almost unnecessary to remark, be of the highest value and importance in various ways, and especially in diminishing the number of those terrible accidents from abandoned workings, which can only be provided against by such means."

Lord LYTTLETON, in proposing the first resolution, said, that any doubts as to the utility of such institutions had long since passed away, and the necessity for furnishing industrial education to skilled mechanics had been admitted by the Commissioners of the Great Exhibition, in the Central Institution which was figured forth in their report. Opposition had been raised to Mechanics' Institutions in bygone days, because in giving elementary education it at times involved moral

training and coercive discipline. In the present instance it was proposed to deal only with the unemployed time of adults, which had no connection with the above difficulty, and he trusted that the spread of elementary schools would render elementary instruction less requisite in adult institutions. He thought that the Committee would do well not to wait until the whole amount required (20,000*l.*) had been realised, for he doubted not but that eventually the design would be carried out in all its entirety. He hoped the School of Design would find a resting-place within the walls of the institution, and the building now occupied by it, revert to its original purpose. His Lordship concluded by moving the following resolution:—"That in the opinion of this meeting it is highly important to the welfare of this town and neighbourhood to establish in Birmingham a Scientific and Literary Society upon a comprehensive plan, having for its object the diffusion and advancement of Science, Literature, and the Arts, in this important community, upon the principles set forth in the report now read."

The Rev. SIDNEY GEDGE, in seconding the above resolution, spoke at great length on the importance of the movement. He believed that the days of prejudice and ignorance were gone, and men of all sects of religion, and shades of politics, could meet together on the common ground of science.

H. LUCKCOCK, Esq., in proposing the second resolution—"That a subscription list be immediately opened for the purpose of carrying the proposed institution into effect," made a few pertinent remarks, and observed that he thought the Town Council should be applied to, to aid the movement, either by the erection of buildings or otherwise.

Mr. A. RYLAND explained the peculiarity which would result from the adoption of the rate or Museums Act. It had been lost in the spring of last year, and was now difficult of adoption, owing to the necessity for two-thirds of the voters being in favour of it before it could be acted upon. Mr. Ryland explained that it was intended to start the proposed institution by subscription, but in order to obtain any benefit, an additional annual sum would be required, as the original Philosophical Institution had failed from the privileges granted to donors, their heirs, and successors.

The Rev. J. A. JAMES considered this meeting was alike a shame and a glory to Birmingham. It disclosed the failure of one institution, but gave indication that, phoenix like, a nobler one would rise out of its ashes. It was disgraceful to think that the town where Priestly had lectured, and Watt spent the greater part of his useful life, should for many years past have had no institution to improve and secure the perpetuity of her manufactures.

In proposing the third resolution, which was as follows:—"That a committee composed of the several gentlemen whose names were appended to the requisition, be appointed to solicit subscriptions, and to give effect to the resolution just carried," W. MATTHEWS, Esq. remarked, that the rage for emigration and gold seeking had, he at one time feared, diverted men's minds from science. He had, however, hopes that in the end a reaction would come, and the result would be that some of the products of the Australian mines would aid in the dissemination of the seeds of knowledge.

Capt. TYNDALL in proposing the fourth resolution, "That if the committee shall find that the sum named in the report cannot be forthwith obtained, they may be empowered to apply the donations which shall be received, provided they shall amount to 4000*l.*, to the establishment of a smaller institution upon the prin-

ciples of the report, to be extended as further sums shall be received," remarked, that the alternative of starting the lesser institution would, he hoped, not be necessary, as he trusted that the liberality of his townsmen would avert what he should consider as something akin to a reproach.

CLECKHEATON.—On the evening of Tuesday, the 28th ult., the Rev. R. Cuthbertson delivered the concluding Lecture of his course, "On Health and Sanitary Reform." The lecture embraced the remedies for the removal of the predisposing causes of fever and other diseases, viz., an abundant supply of pure water, a complete system of sewerage and drainage, the paving and cleansing of streets, due attention to the ventilation and cleansing of dwelling-houses, lodging-houses, &c. The objection to sanitary measures on the ground of expense was considered, and facts were adduced to prove that a judicious expenditure for that purpose will issue in a saving, even in a pecuniary point of view. In conclusion, a summary was given of the suggestions which had been made in the course of the lectures, for promoting the sanitary improvement of the town.

EDINBURGH.—On Friday evening last, Dr. Vaughan of Manchester delivered his Second Lecture, at the Philosophical Institution, on "The History of the Early Asiatic Nations." After showing that the credit of priority in the discovery of Assyrian antiquities was due to M. Botta of Paris, (though he was preceded so far by Mr. Rich, who, when British Resident at Bagdad, on a visit to Mossul long before M. Botta's residence in Mossul, foresaw what a vast field of antiquarian wealth was hid under the surface in that district,) Dr. Vaughan proceeded to detail the difficulties which Dr. Layard had to encounter. He contrasted, in severe style, the promptness and liberality with which the French Government assisted M. Botta, with the dilatoriness of the British Government in aiding Dr. Layard; stating that it was due to Sir S. Canning that the Assyrian antiquities now in the British Museum were not in Paris. The Doctor next proceeded to explain how modern scientific men had been enabled to decypher the arrow-headed characters of the ancient Assyrian language. This, he showed, was by the marble slabs having, in some instances, underneath the arrow-headed characters, the same sentences in the ancient Persian language. After describing Assyria in its highest condition of civilization and prosperity, Dr. Vaughan concluded his eloquent and most interesting lecture by quoting from Isaiah the sublime passages predicting the miserable destruction and desolation of Babylon.

ST. LEONARD'S-ON-SEA.—The Committee of the Mechanics' Institution have been engaged during the past week, in arranging the preliminaries for holding a *conversazione* and exhibition, at the Assembly-rooms, on the 24th instant, and following days. It is intended to comprise works of art, articles of *vertu*, models of inventions, autographs, MSS., oil paintings, water-colour drawings, photographs, coins, medals, specimens of tapestry and curious needlework, specimens of modelling, carving, and sculpture; geological and archæological collections, specimens of natural history, &c. The Committee at the outset aimed at a very modest work, but having received considerable support and patronage from the influential persons in the neighbourhood, a new impetus has been given to their exertions, and they are now preparing to deal with an affair both of magnitude and interest.

STOKE-UPON-TRENT.—On Thursday evening, the 30th ult., the members of the Athenæum held their sixth annual *conversazione*, in the New Town-hall. The Hon. W. F. Cowper, M.P., who presided, said:—"He

believed public feeling generally in this country was becoming more favourable to institutions of that description; and it was agreeable to reflect on the change which had manifested itself in this respect in the public mind. A hundred years ago, when Johnson lived, the majority of the educated classes considered it not only inexpedient, but unnecessary, that the working population should receive any education at all. It was admitted, at the period he alluded to, that it was all very well to teach the young to read and write, but it was only of late years that the importance of cultivating and encouraging a taste for literature and science by means of institutions like that had been recognised. He believed that feeling arose from the same conviction which prompted a very eminent writer to observe that, "whatever abstracts our thoughts from the gratification of the senses, and teaches us to look within ourselves for happiness, tends to advance the dignity of our nature." That Institution was one of the means of promoting the spread of literature; and those who had the direction of it had exercised a wise discretion in not excluding from the library what was known as light literature, for such reading was calculated, at least, to amuse the mind, though the members should prefer the study of improving books to the light literature which was included in the library. Comparing our position in point of education with that of other countries, like France or Germany, he regretted to say we, at present, stood somewhat inferior to them; for, amongst the population of both those nations, the proportion of those who could not read and write was much less than in England."

TENTERDEN.—The *soirée* of the members of the Mutual Improvement Society was held in the Town-hall, on Tuesday, the 4th instant. W. Grisbrook, Esq., the President, occupied the chair. About 160 persons were present. They all seemed much delighted with the amusement offered them, as well as edified with the sentiments proposed in several able speeches, which were delivered at intervals during the evening.

THIRSK.—On Tuesday, the 4th inst., the members of the Mechanics' Institution held their Annual Meeting. The Vice-president, J. Rider, Esq., took the chair shortly after six o'clock; when, after some preliminary matters had been attended to, he called upon M. M. Milburn, Esq., the Secretary, to read the report, from which we extract the following: "From what has been stated, it will be seen that the funds of the institution have nearly doubled since 1848, at which period it seemed to be nearly stationary. The number of members is 106, and the income of the Society for the year ending Jan. 4, 1853, including subscriptions due, is 64*l.* 10*s.* 11*d.* The issue of books is 2,095. The Committee have to congratulate the members on their having with some difficulty, and against considerable competition, obtained a promise of the meeting of the Yorkshire Union of Mechanics' Institutes during the summer of the present year, and the Committee feel it their duty to recommend that the energies of all the members should be employed to give as friendly and hospitable a reception to the delegates as possible." The following are the officers for the year:—President, Sir W. P. Galway, M.P.; Vice-president, J. Rider, Esq.; Treasurer, W. Sinclair, Esq.; Secretary, M. M. Milburn, Esq.; Librarians, Mr. W. Bransby, and Mr. Thomas Scott; Committee, G. Kitchingman, Esq., Messrs. G. Rhodes, G. Whitwell, H. Masterman, jun., G. Lancaster, G. Nicholson, and P. Elgie, of the first and second classes; and Messrs. J. Faulkner, G. Richardson, J. Addison, H. Heworth, and G. Nicholson of the third. Votes of thanks to the officers for the past year were cheerfully carried by acclamation.

## TO CORRESPONDENTS.

**Notice.**—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium-list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

**Country Institutions.**—Correspondents who are so good as to send reports of proceedings of Local Institutions, are requested to forward them immediately after the Meeting to which they refer, and not later than Tuesday morning, if intended for insertion in the following Friday's Journal.

C. B. (will find an answer to his query in No. 5, page 58); P. H. D. (too late).

\* \* The article on Enamels, though in type, cannot appear this week, owing to want of space.

## QUESTIONS FROM CORRESPONDENTS.

**Photographic Apparatus.**—Can any of your readers inform me where I can find a description of a new Photographic Apparatus, called an "accelerator," said to have been invented by a Mr. Beauford, and whether its reported performances can be verified? (No. 23.)

**Steam.**—Is there any good account yet published of the direct application of steam to manufacturing processes? (No. 24.)

**Nails.**—What description of machinery is used in America for forging nails, in place of manual labour? (No. 25.)

## ANSWERS TO CORRESPONDENTS.

**Glass Engraving.**—(No. 9.) Enclosed are two specimens of Glass Engraving (Glas-druck) which were given to me by Dr. Bromeis, of Hanau. The nature of the material allows of very fine engraving, and there are parts of the specimens which give reason to believe that it may attain the very highest point of refinement. I understood from Dr. Bromeis that he expected it to be done in England, but the time is now so long gone by, that it would be better if a new impulse were given to it. R. A. S.

\* \* The specimens exhibit great control over the medium employed, and the capability of producing a good artistic effect, as well as a minuteness of touch hitherto unattained, it is believed, by any previous process. The specimens may be seen on application at the Society's House.

**Shop Lamps.**—(No. 19.) As it cannot matter much whether an obstruction be caused by wood, iron, or glass, there can be little doubt that the Act that was passed for the removal of the tradesmen's signs, &c. (6th Geo. III. c. 26, s. 17) which has not been repealed, could be made use of to remove the existing great nuisance of the tradesmen's lamps. In vol. 3 of "Notes and Queries," page 285, full particulars will be found as to this Act. W. A.

**Omnibuses.**—(No. 18.) It is said that the reason why omnibuses cannot be made wider and higher than at present is owing, in the one case, to the fact that they would not then be able to traverse the narrow thoroughfares, which they are frequently required to do when the broader ones are blocked up; and, in the other case, that the height of the entrances to the stables is so limited, in many instances, that loftier omnibuses could not enter. Larger omnibuses have been made, and used, but their extension has been prevented by these causes. Might not smaller omnibuses, drawn by one horse, and to carry, say, six persons, be introduced with advantage? The fare would, perhaps, need to be higher than at present; but if the thing was well done, this could scarcely be an objection. G. N. H.

## MISCELLANEA.

**COTTON IN MARTINIQUE.**—The Governor of Martinique, it appears, has taken the initiative in certain experiments that are to be made, with a view of forwarding this new culture. We find it stated that the French Consul at New Orleans has been instructed to send to Martinique a quantity of this cotton-seed, sufficient to plant about two hectares of land; and information has been formally asked at the same time as to the quality of soil best adapted to the plant, as well as the manner in which it should be laid out, and the most approved methods established by practice for the sowing, culture, and gathering, of the herbaceous cotton. A planter at Fort-de-France, having obtained some seed from M. Bouvier, of Guadeloupe, a trial of it is forthwith to be made at the Jardin-des-Plantes of St. Pierre, and upon lands near Fort-de-France.

**MINE VENTILATION.**—A petition to Parliament from the coal-miners of Northumberland and Durham is being numerously signed. The petition sets forth the necessity of legislative interference to enforce a better ventilation of mines, and greater precautions against explosions; and prays for an increased number of inspectors, that there may be a closer supervision of mines; for an examination into the fitness of officers and managers of mines, on whom life depends, as in the case of masters and mates of ships; for a six hours' toil for boys under fourteen; for a special coroner to investigate fatal mining accidents; and for penalties in cases of proved negligence.

**CHEAP PORTABLE CAMERA.**—A correspondent suggests the introduction of cheap and small cameras capable of being used by the junior members of Literary and Scientific Institutions, and that a Manual of Elementary Instruction to teach them the mode of procedure is a desideratum. The Society's Premium List has already directed attention to this question.

## PATENT LAW AMENDMENT ACT, 1852.

## APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED—

From Gazette, 7th Jan., 1853.

Dated 21st Dec., 1852.

- 1117. R. Powell—Coats and outer garments.
- 1119. J. B. Moirier and C. C. Boutigny—Concentrating syrups and distillation.
- 1121. G. Beadon, Commander, R.N.—Constructing and propelling ships.
- 1123. W. De la Rue—Surfaces of paper and card-board.
- 1125. E. D. Moore—Preparation of malt and hops.
- 1127. J. Roydes—Machinery for drawing cotton, &c.

Dated 22nd Dec.

- 1129. C. Denis veuve Quinchez—Fabric for making mantles, bonnets, &c.
- 1131. J. Roberts—Apparatus for preserving animal and vegetable matters, and for cooling wines, &c.
- 1133. J. H. Johnson—Machinery for forging iron and other metals. (A communication.)
- 1135. W. Aspdin—Manufacture of Portland and other cements.
- 1137. F. Aychbourn—Rendering materials impervious to air or water.
- 1139. J. Livesey—Lace machinery and piled fabrics.

Dated 23rd Dec.

- 1141. A. J. Hobson—Metallic bedstead.
- 1142. J. W. Couchman—Fastening window-sashes.
- 1143. A. Deutsch—Treating oil of colza, &c.
- 1144. C. Binks—Composition of paints.
- 1145. W. Westley and R. Bayliss—Fastener applicable to window-sashes, tables, &c.
- 1146. N. Malinau—Stopping and covering bottles, &c., and machinery for same.
- 1147. G. Gwynne and G. F. Wilson—Treating fatty and oily matters.
- 1148. W. Roper—Shaping and ornamenting sheet-metal.
- 1149. J. L. David—Manufacture of woollen fabrics.
- 1150. P. Fairbairn and S. R. Mathers—Machinery for carding.
- 1151. J. Davis—Brick and tile-machine.

Dated 24th Dec.

- 1152. F. Peyre and M. Dolques—Machinery for dressing woollen cloth.
- 1153. J. Hinks and G. Wells—Penholder.
- 1154. J. L. Murphy—Drawing off liquids.

1155. J. Burch—Machinery for reaping, loading, stacking, and storing grain. &c.  
 1156. J. Burch—Machinery for threshing, winnowing, cleaning, and sorting grain. &c.  
 1157. J. Burch—Passenger and other carriages.  
 1158. W. Ramsell—Generating steam and hot air, together or separately.  
 1159. R. Griffiths—Motion to drills.  
 1160. G. Michiels—Manufacture of gas.  
 1161. G. Bower—Manufacture of gas.  
 1162. J. G. Wilson—Construction of carriages for railroad and other roads, &c.  
 1163. A. V. Newton—Motive power. (A communication.)  
 1164. R. Lublinski—Joint for umbrella and parasol sticks.  
 1165. W. Tuer, W. Hodgson, and R. Hall—Textile fabrics and machinery for the same.  
 1166. P. C. Nesmond—Machinery for manufacture of ice, &c.

*Dated 27th Dec.*

1167. J. Anderson—Heating and ventilating and remedying smoky chimneys.  
 1168. G. Ingham—Machinery for drawing cotton, &c.  
 1169. Rev. J. F. Gordon—Facilitating the turning of four-wheeled carriages.  
 1170. G. F. Wilson—Treating certain fatty bodies.  
 1171. G. Gwynne and G. F. Wilson—Treating fatty and oily matters.

*Dated 28th Dec.*

1172. J. Mason—Machinery for preparing cotton, &c., for spinning.  
 1173. J. Darling and H. Spencer—Machinery for spinning cotton, &c.  
 1174. W. B. Johnson—Steam-boilers and apparatus.  
 1175. P. T. Giraud—Apparatus to fix bonnets on the head.  
 1176. J. Gldman—A skate.  
 1177. E. Mucklow—Retorts for distillation of pyrologeneous acid, &c.  
 1178. E. Mucklow—Machinery for cutting and rasping dye-woods.  
 1179. E. Mucklow—Preventing radiation of heat from steam-boilers, and effects of incrustation.  
 1180. W. Busfield—Combing wool, &c.  
 1181. A. Bernard and A. Koch—Machinery for preparing flax-straw, flax, &c.  
 1182. J. Webster—Manufacture of springs.  
 1183. C. J. E. Junot—Reducing metallic substances, and plating by means of electricity. (A communication.)  
 1184. S. Clegg—Measuring gas.

*Dated 29th Dec.*

1186. J. Copling—Safeguard railway signal.  
 1187. H. Kibble—Travellers' monitor, or ticket and parcel protector.  
 1188. J. Whicheord and S. E. Rosser—Burning and applying gas for light and heat.  
 1189. B. Glorney—Motive power.  
 1190. S. J. Pittar—Goloshes for boots and shoes.  
 1191. W. E. Newton—Manufacture of carpets. (A communication.)  
 1192. A. D. Brown—Portable articles of furniture.  
 1193. W. Brown—Forging, shaping, and crushing iron, &c., applicable to obtaining and applying motive power.  
 1194. J. E. Cook—Composition for prevention of decay and fouling ships' bottoms and other exposed surfaces.  
 1195. J. W. Friend—Measuring and registering distance run by ships and boats through water.  
 1196. J. Power—Silencing metals and glass.  
 1197. A. E. L. Bellford—Quartz-crushing machinery and amalgamating same, applicable to all kinds of ores.  
 1198. A. E. L. Bellford—New mode of advertising.

*Dated 30th Dec.*

1199. T. Walker—Regulating speed of steam-engines.  
 1200. T. Walker—Regulating dampers of steam boilers and evaporating furnaces, applicable to indication of pressure of steam, &c.  
 1201. H. Hutchin-on—Machines for washing bottles.  
 1202. J. Ward and W. Burman—Brick and tile-machinery.  
 1203. R. S. Oliver—Waterproof and other garments.  
 1204. J. Singer—Wearing apparel.  
 1205. W. E. Newton—Attaching metals to metals.  
 1206. R. Taylerson—Ship-building.

*Dated 31st Dec.*

1208. W. M. Pickslay—Blast furnaces, called "calorific blast."  
 1210. D. Dixon—Apparatus for retarding and stopping locomotive engines, &c.

*From Gazette, 11th Jan., 1853.  
 NONE.*

#### WEEKLY LIST OF PATENTS SEALED.

*Dated 8th Jan., 1853.*

1. Robert Adams, King William-street, City—Improvements in ball-cartridges.
  2. George Henry Brookbank, Crawley-street, Oakley-square improvements in upright pianofortes.
  4. James Hodgson, Liverpool—Improvements in constructing iron ships and vessels.
  5. Joshua Smith, Sheffield—Improvements in table-knives.
  6. Moses Poole, Serle-street—Improvements in the manufacture of guns and pistols.
  9. George Green, Mile-end Road—Improvements in the manufacture of casks.
  13. Edward Lambart Hayward, Blackfriars-road—Improvements in lock-spindles.
  14. Thomas Christy, jun., Gracechurch-street—Improvements in weaving hat, plush, and other piled fabrics.
  16. Moses Poole, Serle-street—Improvements in the manufacture of telescope and other tubes.
  19. Moses Poole, Serle-street—Improvements in moulding articles, when India-rubber combined with other materials are employed.
  21. George Duncan and Arthur Hutton, Chelsea—Improvements in the manufacture of casks.
  24. Moses Poole, Serle-street—Improvements in making covers for, and in binding, books and portfolios, and in making frames for pictures and glasses.
  28. Moses Poole, Serle-street—Improvements in coating metal and other substances with a material not hitherto used for such purposes.
  29. John Daniel Ebinger, Brussels—Improvements in the manufacture of animal charcoal.
  30. Moses Poole, Serle-street—Improvements in the manufacture of trunks, cartouch, and other boxes, in knapsacks, pistol-holders, dressing, writing, and other cases, and swords and other sheaths.
  32. William Pym Flynn, 18, Rutland-place, Cork—Improvements in paddle-wheels.
  33. Moses Poole, Serle-street—Improvements in the manufacture of pails, tubs, baths, buckets, measures, drinking and other vessels, basins, pitchers, and jugs, by the application of a material not hitherto used in such manufactures.
  37. Moses Poole, Serle-street—Improvements in covering and sheathing surfaces with a material not hitherto used for such purpose.
  43. Moses Poole, Serle-street—Improvements in harness and in horse and carriage-furniture.
  120. George Collier, Halifax, Yorkshire—Improvements in the manufacture of carpets and other fabrics.
  121. John Lee Stevens, Kennington—Improvements in furnaces.
  123. Richard Whytock, Greenpark, Zibberton, Mid-Lothian—Improvements in the manufacture of fringes, and of plat for these and other ornamental works.
  136. William George Nixey, Moor-street—Improvements in tiles, and other receptacles for money.
  162. John Ignatius Fuchs, Zerbst, Anhalt Dessau—An electro-magnetic apparatus.
  163. Moses Poole, Serle-street—Improvements in constructing bridges, viaducts, and such like structures.
  230. James Bullough, David Whittaker, and John Walmesley, Blackburn—Improvements in sizing-machines.
  246. George Hallen Cottam, Charles-street, Hampstead-road—Improvements in chairs, sofas, and bedsteads.
  273. John Frederick Chatwin, Birmingham—Improvements in the manufacture of brushes.
  274. John Frederick Chatwin, Birmingham—Improvements in the manufacture of buttons.
  315. Alexander Clark and Patrick Clark, Gate-street, Lincoln's-inn Fields—Improvements in the manufacture of shutters, doors, and windows.
  624. Edward Lord, Tormorden, Yorkshire—Improvements in certain machinery to be used in preparing, spinning, and weaving cotton and other fibrous substances.
  659. John, Edward, and Charles Gosnell, 12, Three King-court, Lombard-street, City—Improvements in brushes.
  674. Peter Fairbairn, Leeds—Improvements in the ordinary screw-gill machinery, when applied to the purposes of drawing, combing, and heckling fibrous materials.
  776. Francis Bresson, 4, South-street, Finsbury—Improved mode of propelling on land and water.
- Sealed under the old law:—  
 Thomas Fildes Cocker, Sheffield, Yorkshire—Improvements in annealing or softening metallic wires and sheets of metal; also in reducing, compressing, or drawing metallic wires; also in the manufacture of metal rolls.

#### WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
Jan. 7	3408	Ventilating Waterproof Garment.	James Thomas Hewes	Vernon-villa, Woolston-lawn, Southampton.
,, 11	3409	A Stay and Dress-fastening.	Caleb Hill	Cheddar, Somersetshire.